

AD HOC ADVISORY COMMITTEE MEETING SUMMARY
Triennial Review WQS
(Reassessment of six issues separated out from Triennial Review)
May 26, 2009

Welcome and Introductions

Advisory Committee Members and Alternates Present:

Department of Defense (DOD): Dave Cotnoir

U.S. Fish and Wildlife Service (USFWS): Cindy Kane

VA Association of Municipal Wastewater Agencies (VAMWA): Jim Pletl, Jamie Mitchell,
Dick Sedgely

VA Department of Health (VDH): Ram Tripathi, Dwight Flammia

VA Coal Association: John Heard

Brooks Smith (Hutton & Williams)

VA Manufacturers Association: Tom Botkins

DEQ Staff Present:

Alan Pollock (Facilitator), Alex Barron, David Whitehurst

Pollock made introductions and gave a brief review of the previous meeting (4/29/09)

Presentation

USFWS presentation based on Augsberger et al investigation into the implications of including mussel toxicity data in water quality criteria derivation datasets. The investigation indicated that freshwater mussels rank as one of the more sensitive organisms to ammonia and copper and recommends that mussel data be added as part of the minimum data set for criteria development.

Discussion:

DOD - Is the EPA considering inclusion of the data discussed in the Augsberger presentation?

AB - Yes.

VAMWA - Has sediment and/or water avenues of toxicity for juveniles (mussels) been investigated and is data that utilizes multiple harnesses available?

AB - yes to both.

Presentation

Alex Barron presented information from a U.S. Geological Survey study - Evaluating the Protection of EPA Criteria for Copper or Ammonia to Freshwater Mussels. The USGS presentation indicated that the hardness dependent copper criteria was poor at estimating acute toxicity for freshwater mussels, while the newer EPA biotic ligand model (BLM) copper criteria was reliable in predicting acute effects. Much of the new data for the freshwater mussels indicate that several mussels are among the most sensitive to copper. When the new data for the

freshwater mussels were added to the EPA dataset, the final acute value was changed from 4.7 to 4.6 µg/L copper. Alex Barron thought that this information suggested that the BLM appeared to be closer to being accurate for the freshwater mussel data than the older hardness-only based criteria that is Virginia's current criteria. However, the presentation indicates that USGS and USFWS still have concerns about the adequacy of the BLM.

For ammonia, the USGS study indicated that the new data for freshwater mussels show that four species are more sensitive than the most sensitive genera in the ammonia criteria dataset, and that the current ammonia criteria often appears to provide inadequate protection to these more sensitive species. When the freshwater mussel data is added to the data set, the final acute value is lowered significantly, suggesting that the current ammonia criteria may not be adequate for protecting some of these mussel species.

Conclusions of the study:

- Ø DOC strongly influenced acute toxicity of copper to juvenile fatmucket
- Ø The Biotic Ligand Model (BLM) in current WQC reliably predicted acute copper toxicity to juvenile fatmucket across a broad range of natural waters
- Ø Adding a small amount of reference natural organic matter to ASTM reconstituted water should be considered for copper toxicity test
- Ø USEPA WQC for copper may not consistently protect fatmucket, and might not adequately protect other mussel species as well

Ammonia toxicity

- Ø pH strongly influenced acute toxicity of ammonia to juvenile fatmucket
- Ø Generic relationship of acute ammonia toxicity to pH in WQC for ammonia is appropriate for juvenile fatmucket
- Ø USEPA WQC for ammonia may not adequately protect freshwater mussels

Discussion:

VAMWA - Are data involving the glochidia stage being considered for inclusion in criteria development data set?

USFWS - Some work is currently being done regarding the glochidia stage and toxicity. In many cases the glochidia life stage can be more sensitive than the juvenile.

AB - One of the significant questions is whether to consider glochidia data as chronic or acute given the short time span of the life stage. EPA will be deciding how to treat these types of data and how to incorporate them in the development of water quality criteria as they complete their reassessment of the ammonia criteria.

Presentation

DEQ presentation by Alex Barron concerning EPA's current disposition on ammonia and copper criteria and suggestions on how to proceed with regard to amending those criteria in VA WQS. DEQ will closely follow EPA's efforts in reevaluating the ammonia criteria. When their recommendations are finalized DEQ will be in a position to initiate a change in Virginia's ammonia criteria. Toxicity of copper to mussels is not yet being as intensively investigated by

EPA as is ammonia. Some of the issues involving the mussel data and criteria development that have been identified in the reassessment of the ammonia criteria could have an influence on how data are handled for other criteria development including copper.

Discussion:

USFWS - Copper may be the next criteria after ammonia for EPA to reassess.

B SMITH - Why wasn't the BLM for copper addressed in the WQS during the most recent Triennial Review?

AEP - The BLM was still under EPA development when Triennial Review was initiated.

DOD - Has the DEQ water quality monitoring office begun gathering data for parameters in VA waters to run the BLM?

AEP - No.

USFWS - USGS may have that information available for some stations.

AEP - Indicated we would speak to DEQ Water Quality Monitoring & Assessment staff regarding investigating the availability of that kind of data to make some sort of impact determination on DEQ programs and the regulated community.

VMA - They had looked at the detection limits for a number of their member facilities and see a lot of non-detects on the reporting forms for cadmium. It is impossible to tell what the impacts would be if the cadmium criteria being discussed were in place.

VAMWA - There was a similar issue with mercury before more sensitive tests were utilized,

VAMWA - Is there an overlay map available for the location/distribution of freshwater mussels?

USFWS - Not on hand but mussels are in most VA waters.

VMA - Application of statewide criteria that incorporate mussel data during criteria development doesn't follow previous discussions TAC has had. It would be appropriate to determine the distribution of mussel species.

DW - A web link to the DGIF Fish & Wildlife Information Service online data base tool will be sent to TAC members.

Alan Pollock indicated that staff would present draft proposals at the next meeting for the six issues discussed by the TAC.

Next meeting on June 17, 2009.